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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|----------------------|------------------|
| 10/660,415 | 09/10/2003 | Ganesh Balamurugan | 884.G57US1 | 5839 |
| 7590 | 10/31/2006 | | EXAMINER | |
| SCHWEGMAN LUNDBERG WOESSNER & KLUTH, P.A. P.O. Box 2938 Minneapolis, MN 55402 | | | PANWALKAR, VINEETA S | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2611 | |

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

(2)

| | | | |
|------------------------------|----------------------|--------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/660,415 | BALAMURUGAN ET AL. | |
| | Examiner | Art Unit | |
| | Vineeta S. Panwalkar | 2611 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 September 2003.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) 12 and 14-18 is/are allowed.
- 6) Claim(s) 1-11 is/are rejected.
- 7) Claim(s) 13 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 10 September 2003 is/are: a) accepted or b) objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a). Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/3/06.
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application
- 6) Other: _____.

DETAILED ACTION

Drawings

1. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application. The drawings submitted on 9/10/2003 are acceptable only for examination purposes, but new formal drawings are necessary. Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Objections

2. Claim 9 is objected to because of the following informalities:
It is suggested that the word "fist" in line 2 of the claim be replaced by ---first---.
It is also suggested that the word "an" in lines 2 and 3 of the claim be replaced by ---and---.
Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 3a. Claim 13 recites the limitation "the scalar" in line 1 of the claim. There is insufficient antecedent basis for this limitation in the claim.
- 3b. Claims 14-18 recite the limitation "the circuit" in line 1 of the claims, but claims 14-18 depend from claim 12, which is a method claim. There is insufficient antecedent basis for this limitation in the claims.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claims 1-11 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The subject matter of the claims is non-statutory because it lacks practical application. Although both claims 1 and 9 claim a circuit or a system, the claimed components do not appear to be used for any practical purpose. The claims do not seem to create a physical

transformation or produce a useful concrete result, but merely seem to be performing calculations on data. (Claims 2-8, 10 and 11 are rejected under 35 U.S.C. 101 as being dependent on claims 1 and 9). See Diehr, 450 U.S. at 188,209 USPQ at 8-9 (quoting See Diehr, 450 U.S. at 188,209 USPQ at 8-9 (quoting Mackay, 306 U.S. at 94), "while a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be." See also Corning v. Burden, 56 U.S. (15 How.) 252,268, 14 L.Ed. 683 (1854) ("It is for the discovery or invention of some practical method or means of producing a beneficial result or effect, that a patent is granted....").

Allowable Subject Matter

5. Claims 12 and 14-18 are allowed. Claim 13 will be allowed if the objection in section 2 above will be overcome.

The following is an examiner's statement of reasons for allowance:

- 5a. Regarding claim 12, prior art of record fails to show a method to calibrate a scale factor in an adaptive equalizer comprising increasing the scale factor by a first increment if the number of numerical overflows and a threshold satisfy a first relationship, in combination with each and every other limitation of the claim (The claim has been interpreted in light of the specification, especially paragraphs [0041] –[0047] and Fig. 10).

5b. Claim 13 will be allowed if the objection in section 2 above will be overcome as being dependent from claim 12.

5c. Claims 14-18 are allowed as being dependent from claim 12.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

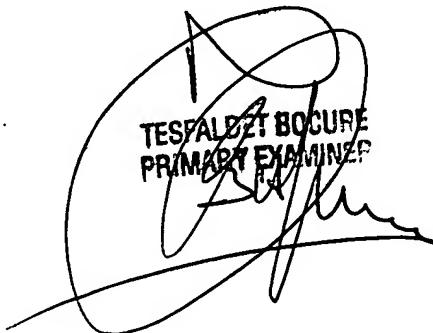
- Sandri et al. (US 6240134 B1) show method for stabilizing the operation of fractionally spaced equalizer in digital signal receivers
- Tran et al. (US 6286021 B1) show an adaptive equalizer with an update unit that has reduced complexity and checks for overflow or leakage.
- Powell (US 611878) shows adaptive filtering with overflow prevention.
- Kukkula et al. (US 6771717 B1) show how scaling may be adjusted based on saturation (overflow).
- Gao et al. (US 2005/0163331 A1) show adaptive filtering that prevents overflow.

Contact Information

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vineeta S. Panwalkar whose telephone number is 571-272-8561. The examiner can normally be reached on M-F 8:30-5:00. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VP



TESPALEZET BOUCURE
PRIMARY EXAMINER